

MILKING PARLOR STALL SHOULDER BUMPER

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BACKGROUND AND SUMMARY

The invention relates to milking parlors having a plurality of milking stalls for milking mammals such as cows.

A milking parlor stall typically has a pair of shoulder bars guidingly 5 locating the shoulders of the cow in a milking position. The bars can engage the cow's shoulders at bony areas having nerves, which is a source of discomfort for the cow. Cows have been observed with sore spots in the shoulders where there is no fur left. The present invention addresses and solves this problem, and additionally provides a further benefit of accommodating different size cows.

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BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a top elevation view of a milking parlor stall known in the prior art.

15 Fig. 2. is a perspective view of a milking parlor in accordance with the present invention.

Fig. 3 is another perspective view of a milking parlor in accordance with the
the
invention.

20 Fig. 4 is a top elevation view of milking stalls in accordance with the
invention.

Fig. 5 is a side elevation view of a parlor stall of Fig. 4.

Fig. 6 is like Fig. 1 but shows the present invention.

Fig. 7 is an isometric view of a portion of a milking parlor in accordance with the invention.

25 Fig. 8 is a perspective view of a portion of Fig. 7.

Fig. 9 is a sectional view taken along line 9-9 of Fig. 8.

Fig. 10 is a sectional view taken along line 10-10 of Fig. 8.

Fig. 11 is an enlarged top elevation view of a portion of Fig. 6.

DETAILED DESCRIPTION OF THE INVENTION

Figs. 1-4 show a milking parlor 20 for milking a plurality of mammals such as cows 22, 24, etc. The parlor has a plurality of milking stalls 26, 28, etc. 5 having respective shoulder bars, such as shoulder bars 32 and 34 for stall 26, and shoulder bars 36 and 38 for stall 28, for guidingly locating the shoulders of the respective cow in a milking position, for example shoulders 40 and 42 of cow 22, shoulders 44 and 46 of cow 24, etc. The milking parlor described thus far is known in the prior art, for example as shown in U.S. Patent 5,203,280 and 10 6,481,371, incorporated herein by reference.

In the present invention, the noted shoulder bars are provided with respective resilient bumpers such as 52, 54, 56, 58, etc. engaging the shoulders of the cows in deformable cushioning relation. A respective stall such as 26 aligns a respective cow such as 22 along a respective longitudinal axis 60 from 15 head 62 to rump 64 of the cow and parallel to the backbone of the cow and bisecting the shoulders 40 and 42 on laterally opposite sides of axis 60. The bumpers are preferably a resilient rubber material and flex laterally outwardly away from axis 60 and also permit continued longitudinal movement of the cow along axis 60, e.g. as shown at arrow 66 in Figs. 4, 6, during the noted lateral 20 outward flexing of bumpers 52, 54, as shown at arrows 68 and 70 in Fig. 6, to accommodate different size cows including cows of differing longitudinal length. The laterally outward flexing of bumper 54 is shown in Fig. 11 at arrow 70 wherein the bumper moves from dashed line position 72 to solid line position 74. This allows slightly continued longitudinal movement of the cow along axis 25 60 as shown at arrow 66, to provide the noted accommodation of differing longitudinal length cows.

Each bumper, for example bumper 54 in Figs. 8-11, has a first sidewall 76, Fig. 9, having an outer surface 78 engaging and mounted to a respective bar 34, and has an inner surface 80 opposite to outer surface 78. Bumper 54 has a 30 second sidewall 82 extending in an arc from first sidewall 76 in a loop and

returning to first sidewall 76 to define a hollow interior 84. Second sidewall 82 has an outer surface 86 engaging shoulder 42 of cow 22, and has an inner surface 88 opposite to outer surface 86 of sidewall 82 and facing inner surface 80 of sidewall 76 across hollow interior 84. Engagement of shoulder 42 of cow 22 with outer surface 86 of sidewall 82 deforms sidewall 82, Fig. 11, and pushes sidewall 82 into hollow interior 84 such that inner surface 88 of sidewall 82 moves toward inner surface 80 of sidewall 76.

Bolts 90, 92, Figs. 9, 10 extend through bar 34 and through sidewall 76 and into hollow interior 84 for mounting bumper 54 to bar 34 by respective threaded nuts 94, 96. A stabilizing plate 98 in hollow interior 84 engages inner surface 80 of sidewall 76. Bolts 90, 92 extend through stabilizing plate 98.

Hollow interior 84 of each bumper has a D-shape. Inner surface 80 of sidewall 76 forms the flat planar extension of the D. Inner surface 88 of sidewall 82 forms the curved arcuate extension of the D. Outer surface 78 of sidewall 76 has an arcuate configuration mating with tube 34 which is preferably cylindrical and has a circular cross section. Outer and inner surfaces 86 and 88 of sidewall 82 each have an arcuate configuration. Inner surface 80 of sidewall 76 has a flat planar configuration. Hollow interior 84 of the bumper provides limited collapse, Figs. 11, 6, upon engagement by the respective shoulder of the cow.

The bumper at outer surface 86 of sidewall 82 resiliently returns to a non-collapsed state, Figs. 7-9, upon disengagement by the shoulder of the cow. The bumper has a resiliently flexible portion at 86 provided by the noted rubber material composition, deforming into hollow interior 84, Fig. 11, upon engagement by the shoulder of the cow, and resiliently returning to the non-collapsed state upon disengagement by the shoulder of the cow.

It is recognized that various equivalents, alternatives and modifications are possible within the scope of the appended claims.